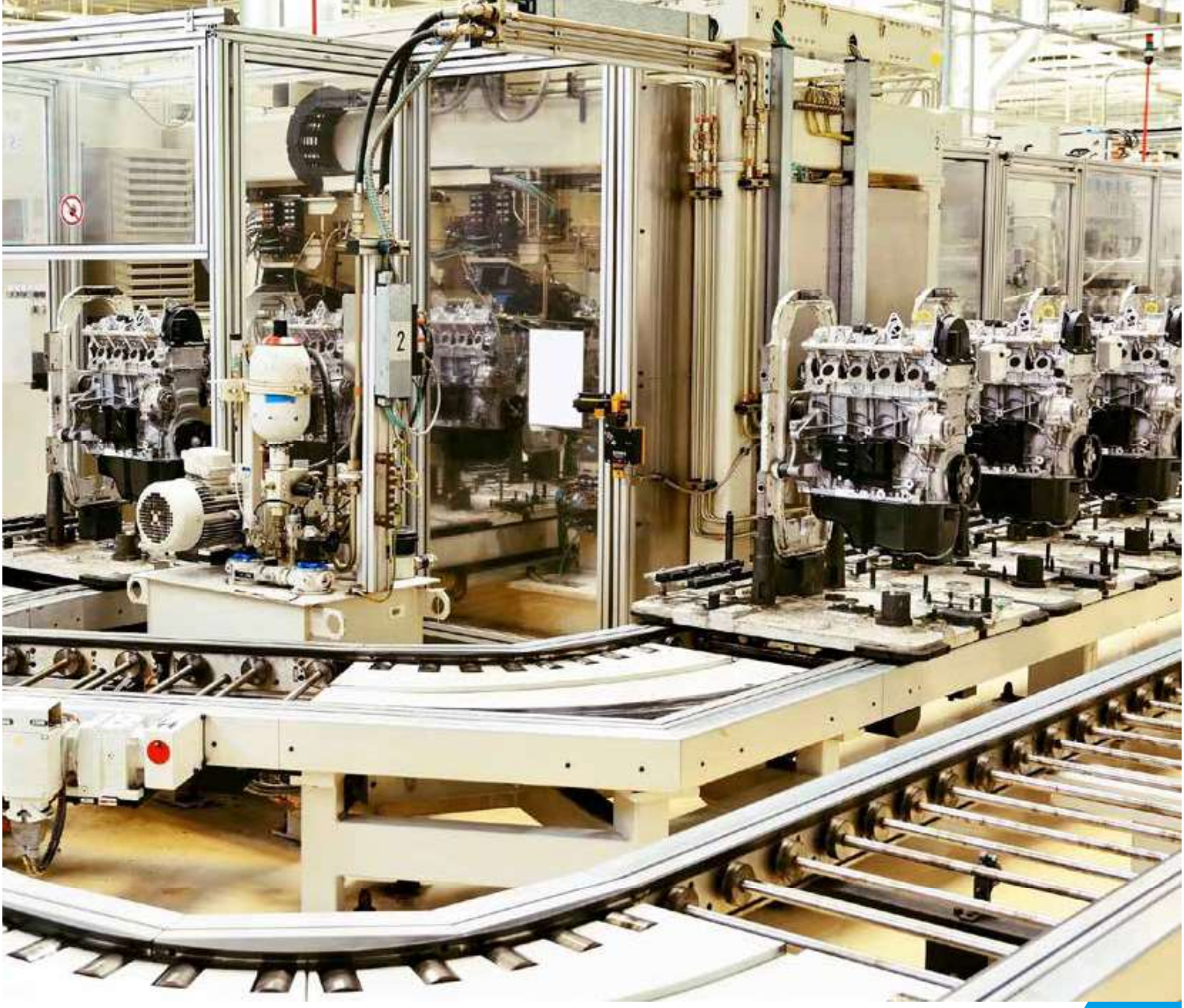


Automation for a Changing World

Delta Vector Control Drive
C2000 Series

reddot design award
winner 2010

www.deltaww.com

DELTA
Smarter. Greener. Together.

General Specifications

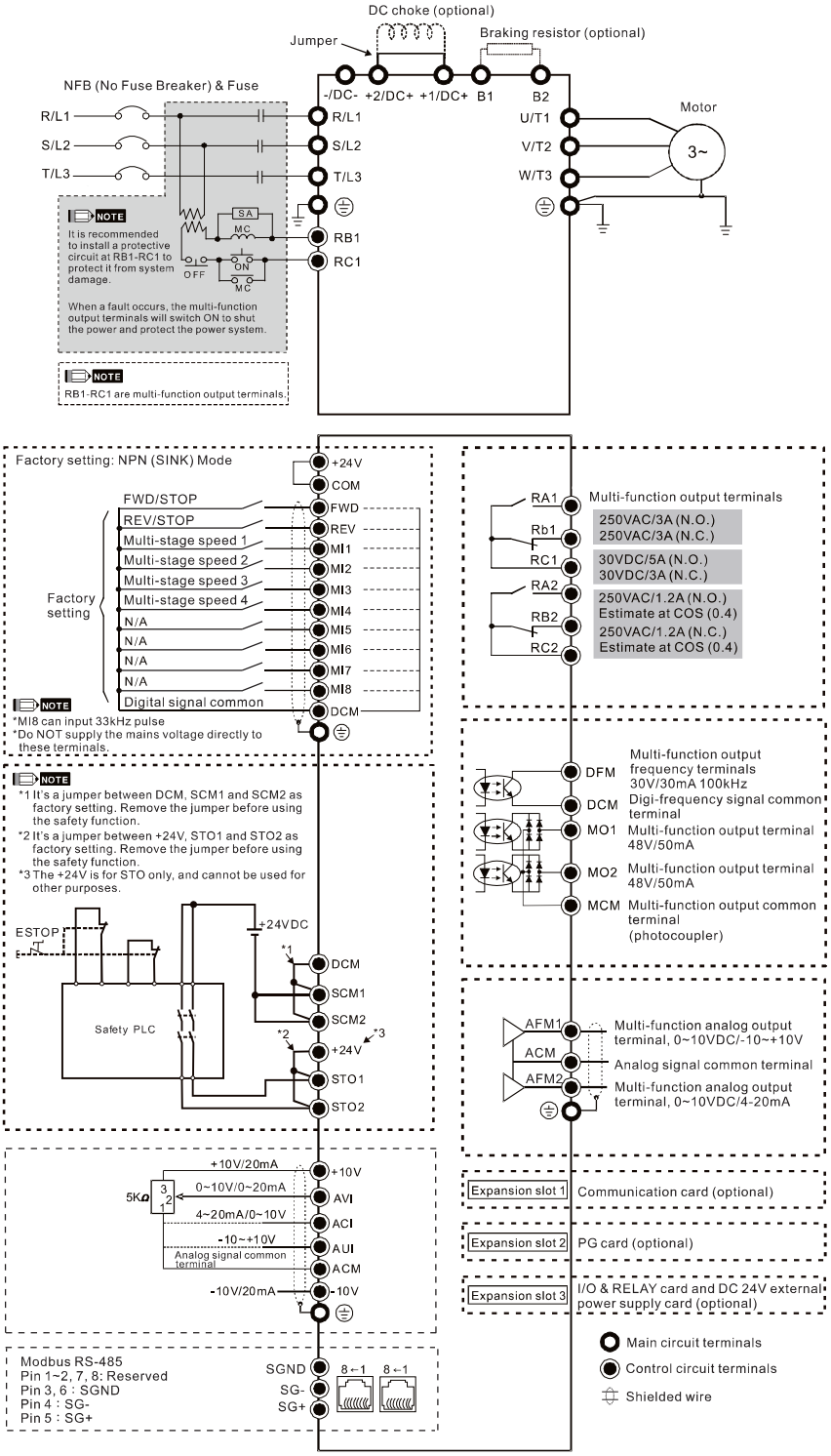
Control Characteristics	Control Method	Pulse Width Modulated (PWM)
	Control Mode	230 V / 460 V model: 1: V / F · 2: SVC · 3: VF+PG · 4: FOC+PG · 5: TQC+PG · 6: PM+PG · 7: FOC sensorless · 8: TQC sensorless · 9: PM sensorless
		575 V / 690 V model: 1: V / F · 2: V / F+PG · 3: SVC
	Starting Torque	Reach up to 150% or above at 0.5 Hz. Under FOC+PG mode, starting torque can reach 150% at 0 Hz
	V/F Curve	4-point adjustable V/F curve and square curve
	Speed Response Ability	5 Hz (vector control can reach up to 40 Hz)
	Torque Limit	230 V / 460 V model: Normal duty 160%, heavy duty 180% of torque current ; 575 V / 690 V model: Maximum 200% of torque current
	Torque Accuracy at TQC Mode	TQC + PG : ±5% TQC Sensorless : ±15%
	Max. Output Frequency (Hz)	Light Duty / Normal duty: 0.01 ~ 599.00 Hz; Heavy duty: 0.00 ~ 300.00 Hz
	Frequency Output Accuracy	Digital command: ±0.01%, -10° C ~ +40° C, Analog command: ±0.1%, 25 ±10° C
	Output Frequency Resolution	Digital command: 0.01 Hz, Analog command: 0.03 * max. output frequency / 60 Hz (±11 bit)
	Overload Capacity	230 V / 460 V model: Normal duty: 120% of rated current can endure for 1 minute during every 5 minutes ; 160% of rated current can endure for 3 seconds during every 30 seconds Heavy duty: 150% of rated current can endure for 1 minute during every 5 minutes ; 180% of rated current can endure for 3 seconds during every 30 seconds
		575 V / 690 V model: Light duty: 120% of rated current can endure for 1 minute Normal duty: 120% of rated current can endure for 1 minute, 150% can endure for 3 seconds Heavy duty: 150% of rated current can endure for 1 minute, 180% can endure for 3 seconds
	Frequency Setting Signal	+10 V ~ -10V, 0 ~ +10 V, 4 ~ 20 mA, 0 ~ 20 mA, pulse input
	Accel. / decel. Time	0.00 ~ 600.00 / 0.0 ~ 6000.0 Seconds
	Main Control Function	Torque control, Speed / torque control switching, Feed forward control, Zero-servo control, Momentary power loss ride thru, Speed search, Over-torque detection, Torque Limit, 16-step speed (Max.), Accel / decel time switch, S-curve accel / decel, 3-wire sequence, Auto-Tuning (rotational, stationary), Dwell, Slip compensation, Torque compensation, JOG frequency, Fault restart, Frequency upper / lower limit settings, DC injection braking at start / stop, High slip braking, Parameter copy PID control (with sleep function), Energy saving control, MODOBUS communication (RS-485 RJ45, Max. 115.2 kbps)
	Fan Control	230 V model: VFD150C23A (include) and series above: PMW control; VFD110C23A and below: on / off switch control 460 V model: VFD185C43A (include) and series above: PMW control; VFD150C43A and below: on / off switch control 575 V / 690 V model: PWM control
Protection Characteristics	Motor Protection	Electronic thermal relay protection
	Over-current Protection	230 V / 460 V model: Over-current protection for 240% of rated current (Normal duty) Current clamp (Normal duty: around 170 ~ 175%); (Heavy duty: around 180 ~ 185%)
		575 V / 690 V model: Over-current protection for 225% rated current (Normal duty) Current clamp (Light duty: around 128 ~ 141%); (Normal duty: around 170 ~ 175%); (Heavy duty: around 202% ~ 210%)
	Over-Voltage Protection	The C2000 Series will shut down under below conditions: 230 V: DC bus over 410 V; 460 V: DC bus over 820 V; 575 V / 690 V: DC bus over 1189 V
	Over-Temperature Protection	Built-in temperature sensor
	Stall Prevention	Stall prevention during acceleration, deceleration and running independently
	Restart after Instantaneous Power Failure	Parameter setting up to 20 seconds
	Grounding Leakage Current Protection	Leakage current is higher than 50% of rated current of the AC motor drive
	Short-circuit Current Rating (SCCR)	Per UL508C, the drive is suitable for use on a circuit capable of delivering not more than 100kA symmetrical amperes (rms) when protected by fuses given in the fuse table
International Certifications		CE UL EAC

Note: EAC Certification is for 230V and 460V models only

Wiring

Wiring Diagram for Frame A ~ C

*Input: 3-phase power

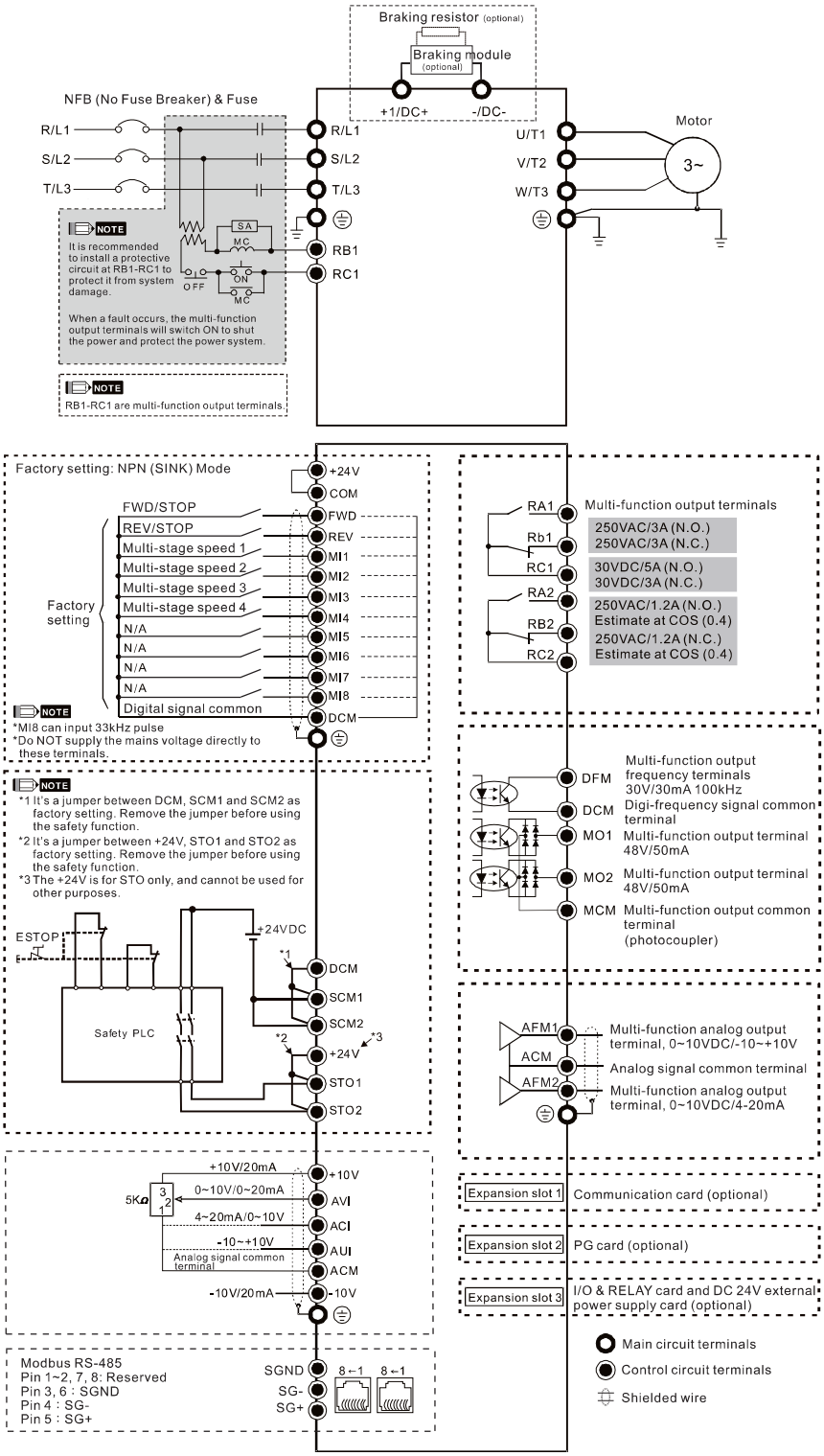


NOTE

It is not recommended to use a power capacitor or automatic power factor regulator (APFR) at the power input side. If the system requires such a device, please make sure a reactor is installed between the drive and the power capacitor or APFR.

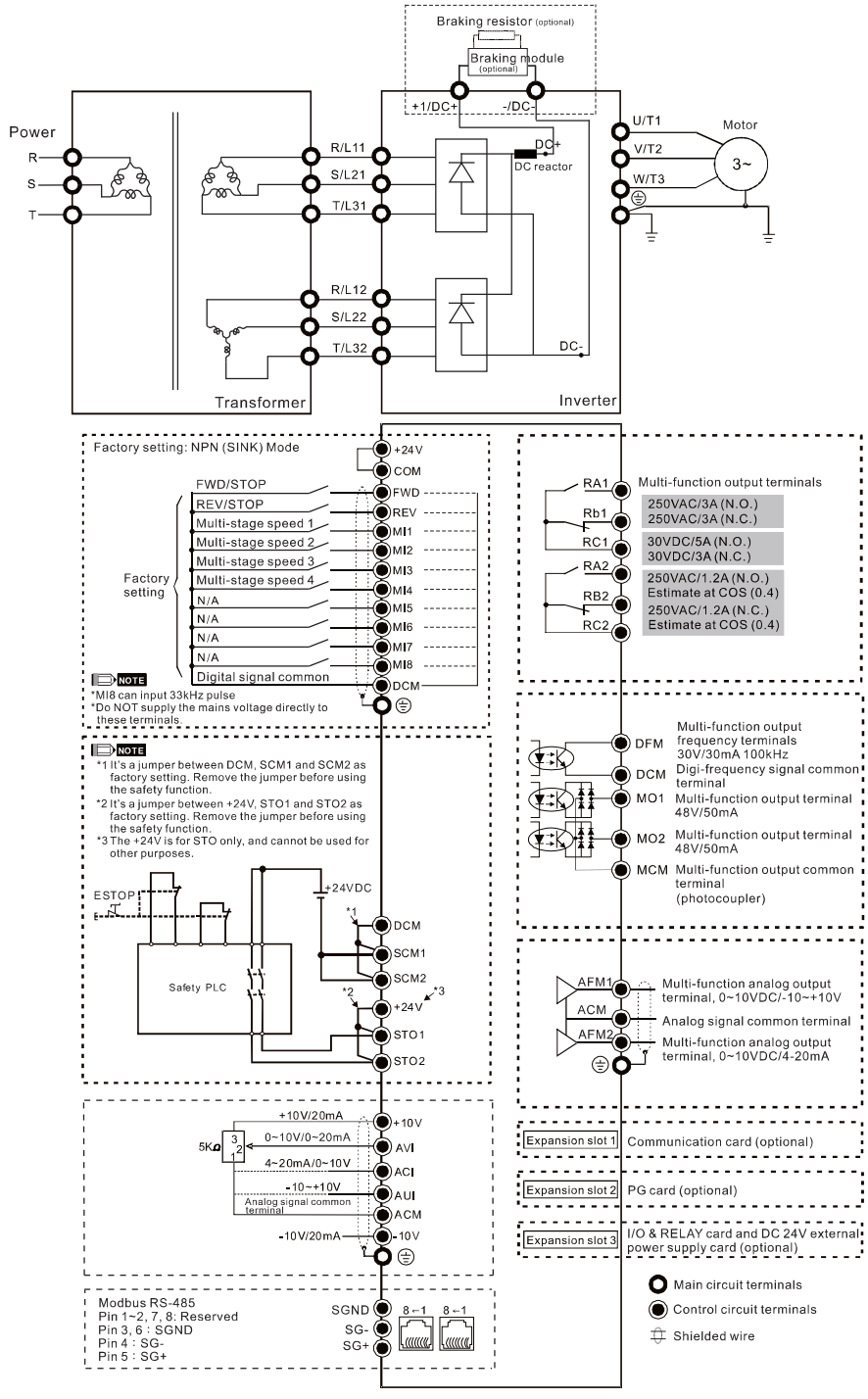
Wiring Diagram for Frame D ~ F

*Input: 3-phase power



Wiring Diagram for Frame G ~ H

*Input: 3-phase power

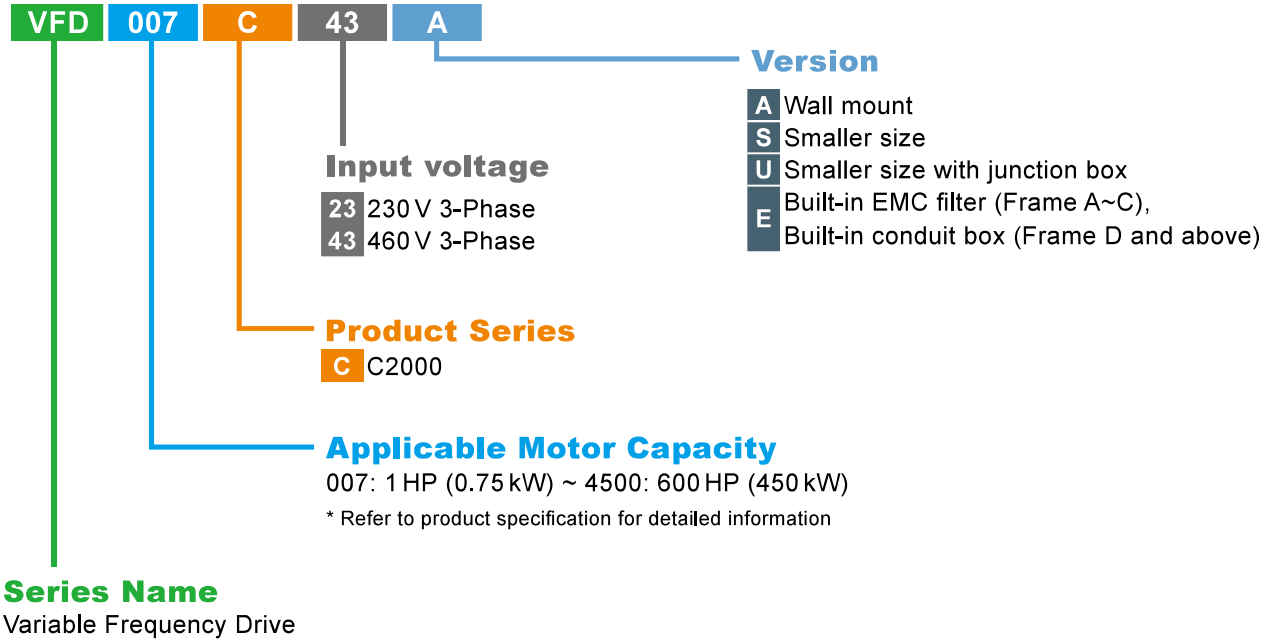


NOTE

It is not recommended to use a power capacitor or automatic power factor regulator (APFR) at the power input side. If the system requires such a device, please make sure a reactor is installed between the drive and the power capacitor or APFR.

Model Name

▪ **230 V / 460 V:**



▪ **575 V / 690 V:**